

REMARKS

This document is filed in response to the final office action mailed May 16, 2008 and the advisory action mailed June 16, 2008.

Initially, Applicants acknowledge with appreciation the Examiner's indication that the amendments to claims 40 and 45 proposed in the last response were entered and that the 35 U.S.C. §102(b) rejection of claims 1, 3, 6, 9, 12, 33, 34, 38-40 and 43-45 raised in the final office action has been overcome.

In the advisory action, the Examiner maintained the three 35 U.S.C. §103(a) rejections of claims 1, 3, 5-9, 12, 14-31, 33, 34, 38-40, 43-45, and 47-49 raised in the final office action. Applicants traverse each rejection below.

Claims 1, 3, 6, 9, 12, 33, 34, 38-40 and 43-45 were rejected in the final office action under 35 U.S.C. §103(a) as obvious over the combination of Sariciftci et al., U.S. Patent 5,454,880 ("Sariciftci") and Yu et al., U.S. Patent 6,483,099 ("Yu"). These claims require a first electrode that photons strike during use, and a different electrode that is opaque and includes a predominantly organic material. Sariciftci does not disclose or render obvious such subject matter. Sariciftci discloses a device with a substrate. (Sariciftci, col. 5, lines 36-38.) In instances where the substrate is not conducting, his device includes an electrode that can be made of metals, mixed oxides or conducting polymers. (*Id.*, lines 36-46.) Sariciftci makes no comment regarding the transparency of this electrode. Sariciftci certainly does not disclose or indicate that this electrode is opaque. Sariciftci's device also includes a second electrode. (*Id.*, col. 6, lines 5-16.) With respect to the second electrode, he states:

A conducting electrode layer is applied, typically serving as a transparent contact to the heterojunction bilayer. Transparent conducting layers for said contact may be conducting layers made from mixed oxides (such as indium/tin oxide) and conducting polymer layers (such as polyaniline or conducting polyblends of polyaniline). For efficient photoinduced charge transfer, this upper contact desirably is either transparent or covers only a fraction of the area of the device which is exposed to the sunlight. Otherwise the incident light would be absorbed in the electrode rather than near the heterojunction interface. (Sariciftci, col. 6, lines 5-16.)

In view of this disclosure, one skilled in the art would understand that it is the second electrode that photons strike during use of Sariciftci's device. When the second electrode is transparent, Sariciftci says that it may be made mixed oxides or conducting polymers. But, Sariciftci does not disclose or otherwise indicate what the second electrode is made of if it is not transparent, and he definitely does not disclose a nontransparent polymer for use an electrode. Thus, Sariciftci discloses a device having an electrode that photons strike during use that can be formed of a transparent polymer or an undisclosed non-transparent material, and a second electrode that is of undisclosed transparency (or opacity). This is very different from a first electrode that photons strike during use, and a different electrode that is opaque and includes a predominantly organic material, as required by claims 1, 3, 6, 9, 12, 33, 34, 38-40 and 43-45. Hence, Sariciftci does not disclose the subject matter covered by these claims. Nor, based on Sariciftci, would it have been obvious to modify Sariciftci to provide such subject matter. As a result, Sariciftci does not disclose or render obvious the subject matter covered by claims 1, 3, 6, 9, 12, 33, 34, 38-40 and 43-45.

Yu does not cure Sariciftci's deficiencies. Yu discloses diode detectors. (Yu, Abstract.) Yu does not disclose photovoltaic cells. As known to those skilled in the art, there can be significant differences in the design considerations of electrodes used in diode detectors, as compared with photovoltaic cells. Accordingly, it is not at all clear that one skilled in the art would have even considered Yu. Even one skilled in the art would have considered Yu, the result would not have been the subject matter covered by claims 1, 3, 6, 9, 12, 33, 34, 38-40 and 43-45. Yu discloses a diode detector which can include a transparent or semitransparent polymer electrode 11 and an electrode 13, where light strikes electrode 11 during use. (*Id.*, col. 11, line 64-col. 12, line 46 and Fig. 1.) Yu also discloses an alternative diode detector design which can include a transparent or semitransparent polymer electrode 13 and an electrode 11, where light strikes electrode 13 during use. (*Id.*, col. 11, line 64-col. 12, line 46 and Fig. 2.) Thus, while Yu does disclose that he can manipulate his device so that light can strike either electrode 11 or 13 during use, the electrode that the light strikes during use is always transparent or semitransparent. Accordingly, Yu basically teaches that you can manipulate his diode detector design so long as the electrode on which the light impinges is transparent or semitransparent. Indeed, Yu actually states that both electrode 11 and electrode 13 can be transparent. (*Id.*, col. 12, lines 47-50.)

Clearly, such a teaching does not cure Sariciftci's deficiencies with respect to the subject matter covered by claims 1, 3, 6, 9, 12, 33, 34, 38-40 and 43-45.

The Examiner's logic with respect to how Yu would have been used to modify Sariciftci is unclear. But, it seems that the Examiner may believe that Yu teaches that you can basically switch the sides that light strikes a photovoltaic cell during use. Applicants disagree that such an interpretation of Yu is appropriate. But, even if such an interpretation were correct, the result of combining Yu with Sariciftci would be a device having an electrode that photons strike during use that is of undisclosed transparency (or opacity), and a second electrode that can be formed of a transparent polymer or an unknown non-transparent material. This is not a first electrode that photons strike during use, and a different electrode that is opaque and includes a predominantly organic material, as required by claims 1, 3, 6, 9, 12, 33, 34, 38-40 and 43-45.

In the advisory action, the Examiner contended that:

"Sariciftci discloses a photodiode with the limitations claimed, as well as a second opaque electrode comprising an organic material, but does not specify that light is incident upon the first electrode side. Yu teaches a known alternative geometry for light detecting photodiodes comprises a transparent substrate and first electrode, when light is to be incident upon the first electrode side." (Advisory Action, page 1; emphasis added.)

Applicants disagree. As discussed above, Sariciftci discloses a device having an electrode that photons strike during use that can be formed of a transparent polymer or an undisclosed non-transparent material, and a second electrode that is of undisclosed transparency (or opacity). In other words, Sariciftci does not disclose "a second opaque electrode having an organic material" as asserted by the Examiner. Nor, based on Sariciftci, would it have been obvious to modify Sariciftci to provide such subject matter. As explained above, Sariciftci simply does not disclose or render obvious an electrode that is opaque and includes a predominantly organic material.

In addition, Yu does not disclose or render obvious such an electrode either. As discussed above, Yu describes an electrode on which the light impinges is transparent or semitransparent. Yu does not disclose or render obvious that the other electrode is opaque or includes a predominantly organic material, let alone an electrode that is both opaque and includes a predominantly organic material, as required by claims 1, 3, 6, 9, 12, 33, 34, 38-40 and

43-45. Indeed, Yu teaches that the other electrode is typically made of a metal, such as Ca, Sm, Y, Mg, Al, In, Cu, Ag, Au and so on.” (Yu, col. 12, lines 36-37.) Thus, Yu only discloses metals for the other electrode and, as Yu itself discloses, such metals can be transparent or semitransparent. Simply put, nowhere does Yu disclose or otherwise indicate that the other electrode is opaque and includes a predominantly organic material. Thus, without conceding that such a combination is appropriate, even if Sariciftci and Yu were combined, the result would not have been a device having a first electrode that photons strike during use, and a different electrode that is opaque and includes a predominantly organic material, as required by claims 1, 3, 6, 9, 12, 33, 34, 38-40 and 43-45.

Accordingly, Applicants request reconsideration and withdrawal of the rejection of these claims under 35 U.S.C. §103(a).

Claims 5, 7, 14-29 and 47-49 were rejected in the final office action under 35 U.S.C. §103(a) as obvious over the combination of Sariciftci and Yu and further in view of Kataoka et al., U.S. Patent 5,389,159 (“Kataoka”). These claims require a first electrode that photons strike during use, and a different electrode that is opaque and includes a predominantly organic material. As explained above, the combination of Sariciftci and Yu does not render this subject matter obvious. Kataoka does not cure the deficiencies of the combination of Sariciftci and Yu. Thus, claims 5, 7, 14-29 and 47-49 are not obvious over Sariciftci and Yu in view of Kataoka.

Further, claim 7 is patentable on an additional, independent ground. Specifically, claim 7 covers processes in which the second electrode is applied by a printing technique. None of Sariciftci, Yu, and Kataoka discloses or renders obvious a process of using a printing technique to prepare an electrode. Indeed, Sariciftci, Yu, and Kataoka are all entirely silent on a printing technique, as required by claim 7. Thus, claim 7 is patentable over Sariciftci and Yu in view of Kataoka on this additional ground.

Accordingly Applicants request reconsideration and withdrawal of the rejection of claims 5, 7, 14-29 and 47-49 under 35 U.S.C. §103(a).

Claims 8, 30 and 31 were rejected in the final office action under 35 U.S.C. §103(a) as obvious over the combination of Sariciftci and Yu and further in view of Lamotte et al., U.S. Patent 6,746,751 (“Lamotte”). These claims require a first electrode that photons strike during use, and a different electrode that is opaque and includes a predominantly organic material. As

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explained above, the combination of Sariciftci and Yu does not render this subject matter obvious. Lamotte does not cure the deficiencies of the combination of Sariciftci and Yu. Applicants therefore request reconsideration and withdrawal of the rejection of claims 8, 30 and 31 under 35 U.S.C. §103(a).

Applicants submit that the pending claims are now in condition for allowance, which action is respectfully requested.

Please apply charges, if any, to deposit account 06-1050, referencing Attorney's Docket No. 21928-18US1.

Respectfully submitted,

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/Tony Zhang/
Tony Zhang, Ph.D.
Reg. No. L0256

Fish & Richardson P.C.
Citigroup Center - 52nd Floor
153 East 53rd Street
New York, New York 10022-4611
Telephone: (212) 765-5070
Facsimile: (877) 769-7945